

Author: D. RATNASINGHE, P. LIMBURG, J.A. TANGREA

Journal: Gastroenterology International 12(3); 1999

Abstract: The best known action of non-steroidal anti-inflammatory drugs (NSAIDs) is to block cyclooxygenase, the rate-limiting enzyme in the conversion of arachidonic acid to pro-carcinogenic prostaglandins. Two cyclooxygenase genes (Cox-1 and Cox-2) have been identified. Cox-1 is a housekeeping gene and Cox-2 is an inducible early response gene. Several lines of evidence suggest that the use of NSAIDs may reduce the risk of esophageal cancer. The evidence includes several experimental and epidemiological studies. For example, in vitro experiments have shown NSAIDs to be anti-proliferative in the Cox-2 expressing esophageal cancer cell line OSC-2. Immunohistochemical Cox-2 expression analyses in adenocarcinomas and squamous cell cancers of the esophagus have shown enhanced expression of Cox-2 compared to normal esophageal mucosa. Furthermore, aspirin and other NSAIDs have been shown to inhibit chemically induced esophageal cancer in rats. In human populations, observational data suggest a beneficial effect from NSAID use on esophageal cancer risk.